

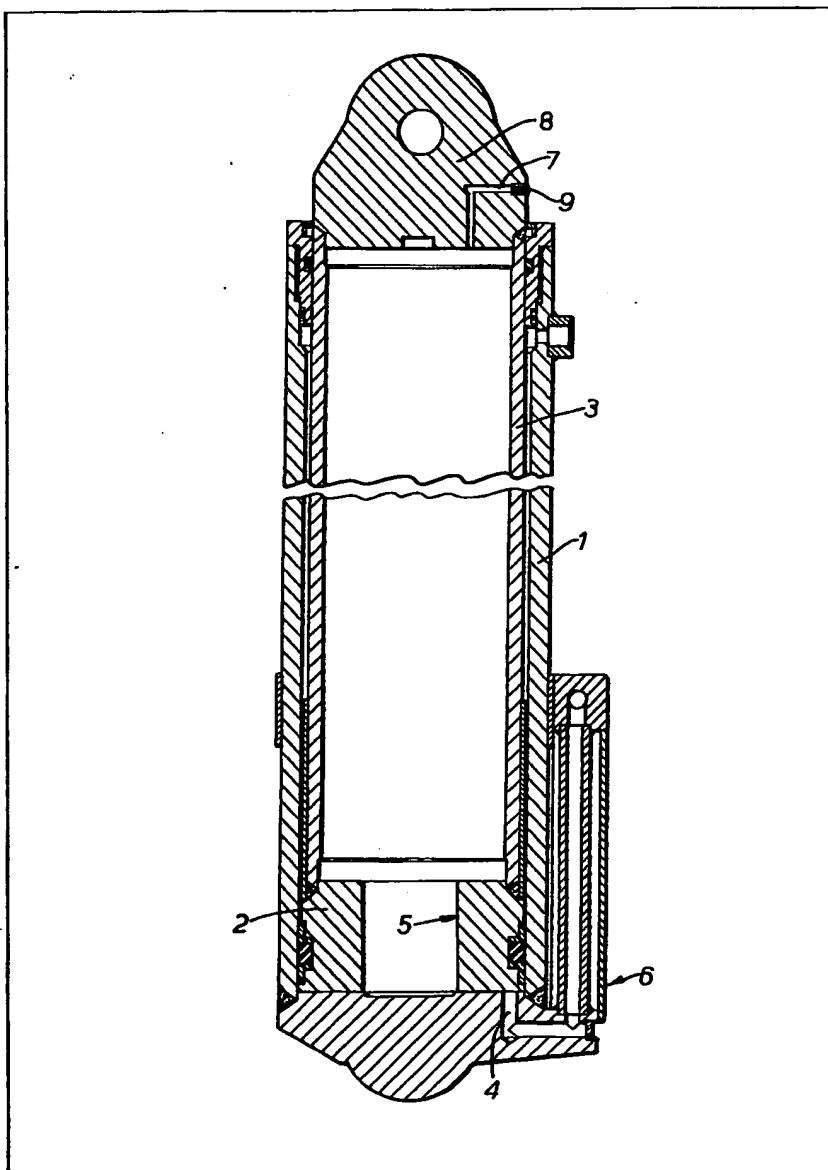
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(54) Hydraulic pit prop

(57) This invention relates to a hydraulic pit prop having a piston 2 with a piston rod 3 which are slidable with respect to a cylinder 1. Liquid under

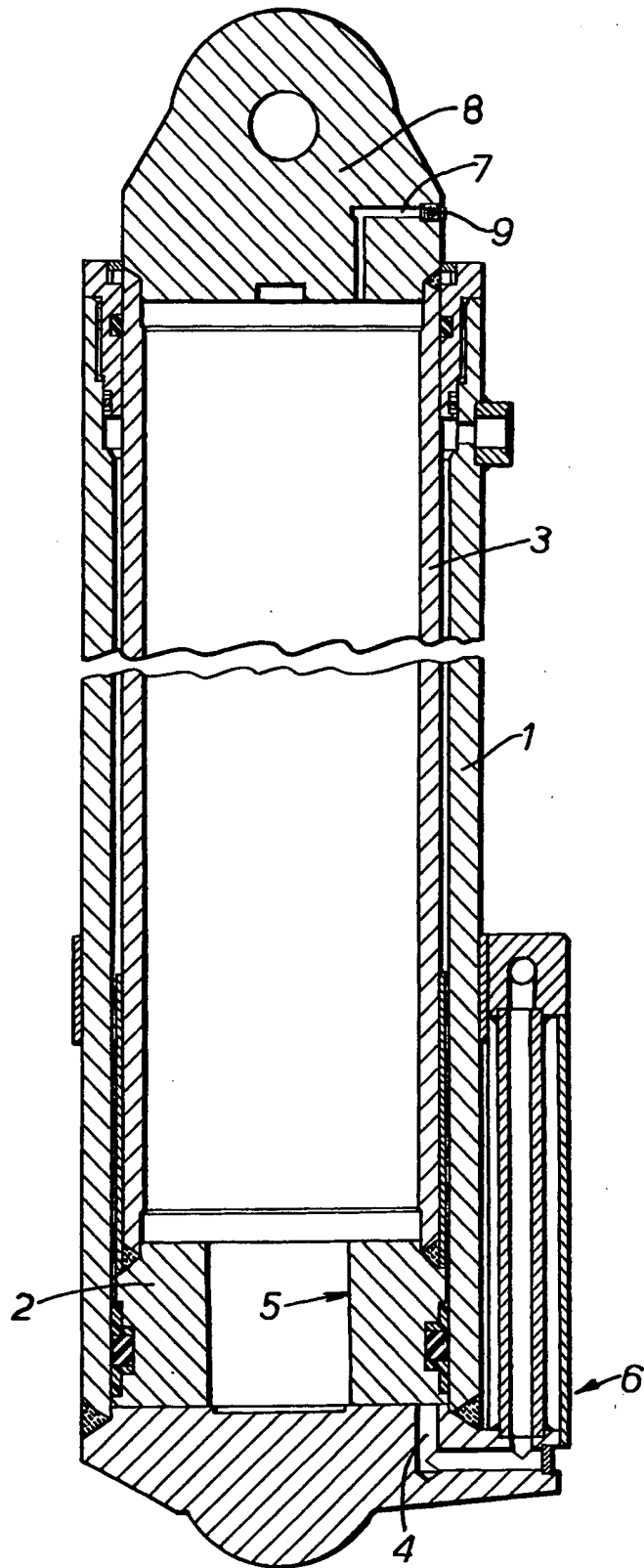
pressure is fed into the cylinder by a passage 4 in or near to the closed end portion of the cylinder which end, in use, is usually lowermost. The piston rod 3 is hollow and an opening 5 is provided between the cylinder 1 and the interior of the piston rod 3 so that when liquid is fed into the cylinder 1 it flows through the opening 5 and fills not only that part of the cylinder 1 below the piston 2 but also the interior of the piston rod 3.



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## SPECIFICATION

## Hydraulic pit prop

5 This invention relates to a hydraulic pit prop suitable, but not necessarily, for use in a powered roof support which comprises a plurality of such props. According to this invention a hydraulic pit prop comprises a cylinder, a piston with a hollow piston rod slidable with respect to the cylinder, means associated with the cylinder whereby liquid can be introduced directly into the cylinder to cause movement of the piston rod outwardly of the cylinder, and an opening between the cylinder and the interior of the piston rod so that liquid introduced directly into the cylinder will flow therefrom into the interior of the hollow piston rod, whereby both the cylinder and the hollow piston rod become filled with liquid.

By introducing the liquid into the cylinder and permitting it to flow therefrom into the interior of the piston rod, so that both are filled with liquid, the performance of the pit prop when subject, in use, to shock loading, e.g. due to a sudden collapse of a roof supported thereby, or to a heavy object hitting and tending to compress the prop, is improved.

A hydraulic pit prop in accordance with one embodiment of the invention is illustrated, partly in section, in the accompanying drawing of which 1 is the cylinder, 2 is the piston, 3 is the hollow piston rod, 4 is a passage in the closed end portion of the cylinder forming a means associated with the cylinder whereby liquid can be directly introduced into the cylinder, and 5 is an opening in the piston rod so that, when liquid is introduced into the cylinder, it will flow therefrom into the interior of the hollow piston rod. Thus, both the space in the cylinder below the piston rod and the interior of the hollow piston rod become filled with liquid.

The whole is suitably sealed to prevent egress of liquid under pressure contained in the prop.

In the illustrated pit prop the passage 4 is conveniently connected to a filling tube 6 attached to the closed end portion of cylinder 1, which end portion will usually be the base portion of the prop when in use. The filling tube 6 will be connected to a valve system commonly used with hydraulic pit props to enable the prop to relieve as the pressure on it increases and to be collapsed, when necessary, from an extended position to a contracted position.

A passageway 7 in that end 8 of the piston rod 3 which is remote from the piston 2 is closed by a removable bleed plug 9. This allows air to be removed, when necessary, from the interior of the hollow piston rod 3.

## CLAIMS

1. A hydraulic pit prop comprising a cylinder, a piston with a hollow piston rod slidable with respect to the cylinder, means associated with the cylinder whereby liquid can be introduced directly into the cylinder to cause movement of the piston rod outwardly of the cylinder, and an opening between the cylinder and the interior of the piston rod so that liquid introduced directly into the cylinder will flow

therefrom into the interior of the hollow piston rod, whereby both the cylinder and the hollow piston rod become filled with liquid.

2. A hydraulic pit prop as claimed in Claim 1 having a filling tube attached to the closed end portion of the cylinder.

3. A hydraulic pit prop as claimed in either Claim 1 or Claim 2 having a passageway, closed by a removable bleed plug, communicating with the interior of the hollow piston rod.

4. A hydraulic pit prop substantially as hereinbefore described with reference to the accompanying drawing.

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